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मानक

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IS 11001 (1984): Double Centrifuged Natural Rubber Latex  
[PCD 13: Rubber and Rubber Products]



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*Indian Standard*  
SPECIFICATION FOR  
DOUBLE CENTRIFUGED  
NATURAL RUBBER LATEX

UDC 678.4.031



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INDIAN STANDARDS INSTITUTION  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

**AMENDMENT NO. 1   OCTOBER 2000**  
**TO**  
**IS 11001 : 1984   SPECIFICATION FOR DOUBLE**  
**CENTRIFUGED NATURAL RUBBER LATEX**

[ *Page 5, clause 3.2(b)* ] — Substitute the following for the existing:  
'Net and gross mass in kilograms;'

( PCD 14 )

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Reprography Unit, BIS, New Delhi, India

# *Indian Standard*

## SPECIFICATION FOR DOUBLE CENTRIFUGED NATURAL RUBBER LATEX

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( *Continued on page 2* )

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*Indian Standard*  
**SPECIFICATION FOR  
DOUBLE CENTRIFUGED  
NATURAL RUBBER LATEX**

**0. FOREWORD**

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 14 September 1984, after the draft finalized by the Rubber Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

**0.2** Double centrifuged rubber latex is prepared from ordinary concentrated natural rubber latex by a second centrifugation after suitably diluting the latex. This is a basic raw material for condom manufacture, which require special quality latex for production of good quality product. This standard is, however intended to provide the plantation industry a guide to produce latex to suit the demand of consumer.

**0.3** This standard contains clause **2.4** which calls for agreement between the purchaser and the supplier.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS:2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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**1. SCOPE**

**1.1** This standard prescribes the requirements and the methods of sampling and test for double centrifuged natural rubber latex.

**2. REQUIREMENTS**

**2.1 Colour** — When visually examined, material shall be of natural latex colour free from pronounced blue or grey tinge.

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\*Rules for rounding off numerical values ( *revised* ).



**2.2 Odour** --- There shall not be any pronounced odour of putrefication, after the neutralization of ammonia with boric acid.

**2.3** The material shall also comply with the requirements as given in Table 1.

**TABLE 1 REQUIREMENTS FOR DOUBLE CENTRIFUGED  
NATURAL RUBBER LATEX**

Sl. No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST REF TO	
			IS:3708 (Part 1)-1966*	IS:9316
(1)	(2)	(3)	(4)	(5)
i)	Dry rubber content, percent by mass, <i>Min</i>	60.0	NRL 1	—
ii)	Non rubber solids†, percent by mass, <i>Max</i>	0.8	—	—
iii)	Sludge content, percent by mass, <i>Max</i>	0.01	NRL 5	—
iv)	Ammonia content, percent by mass, <i>Min</i>	0.7	NRL 7	—
v)	KOH number, <i>Max</i>	0.50	NRL 8	—
vi)	Mechanical stability, seconds, <i>Min</i>	650	NRL 9	—
vii)	Volatile fatty acid number, <i>Max</i>	0.05	NRL 10	—
viii)	Coagulum content, percent by mass, <i>Max</i>	0.01	—	(Part 3)-1979†
ix)	Copper, ppm, <i>Max</i>	5	NRL 13	—
x)	Iron, ppm, <i>Max</i>	8	NRL 14	—
xi)	Manganese, ppm, <i>Max</i>	8	NRL 15	—

\*Methods of test for natural rubber latex, Part 1.

†Difference between total solids content and dry rubber content. Requirement for total solid content shall be determined according to IS:9316 (Part 4)-1979 Methods of test for rubber latex: Determination of total solid content.

‡Methods of test for rubber latex: Determination of coagulum content.

**2.4 Optional Requirements** — The limit for magnesium contents when determined in accordance with the method prescribed in IS:3708 ( Part 2)-1968\* shall be as agreed to between the purchaser and the supplier.

### 3. PACKING AND MARKING

**3.1 Packing** — The latex shall be packed in drum, so as to contain  $200 \pm 3$  litres ( *see* IS:5190-1969†), or in tanks as agreed to between the purchaser and the supplier.

**3.2 Marking** — The containers shall be marked with the following informations:

- a) Name of the producer or trade-mark, if any;
- b) Net and gross mass in kilograms, and volume in litres;
- c) Dry rubber content ( DRC ); and
- d) Date of packing

**3.2.1** The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

### 4. SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

**4.1** The method of drawing representative sample of the material and criteria for conformity is given in Appendix A.

## APPENDIX A

( *Clause 4.1* )

### SAMPLING OF RUBBER LATEX

#### A-1. SCALE OF SAMPLING

**A-1.1 Lot** — In any consignment all the packages of the same size containing material of the same type and colour shall be grouped together to constitute a lot.

\*Methods of test for natural rubber latex, Part 2.

†Code for packaging of natural rubber latex in drums.

**A-1.2** For ascertaining the conformity of the material to the requirements of this specification, each lot shall be considered separately.

**A-1.3 Tank Supplies** — When the lot is composed of tanks or other bulk containers, samples shall be separately taken from each of the tanks/bulk containers. For this purpose the procedure given in IS:9316 (Part 5)-1979\* should be followed.

**A-1.4 Drum Supplies** — When the lot is composed of drums, the number of drums to be selected for sampling shall depend on the size of the lot and shall be in accordance with col 2 of Table 2.

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**TABLE 2 NUMBER OF DRUMS TO BE SELECTED**

NO. OF DRUMS IN THE LOT	NO. OF DRUMS IN THE SAMPLE
$N$	$n$
(1)	(2)
Up to 40	4
41 to 100	7
101 and above	10

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**A-1.5** The drums shall be selected at random from the lot. In order to ensure the randomness of selection, procedures given in IS:4905-1968† may be followed. Alternately, the following procedure shall be adopted.

Starting from any drum, count the drums in a lot in one order as 1, 2, 3, etc, up to  $r$  and so on where  $r$  is the integral part of  $N/n$ . Every  $r$ th drum thus counted shall be withdrawn to constitute a sample.

## **A-2. PREPARATION OF TEST SAMPLES AND REFEREE SAMPLE**

**A-2.1 Composite Sample** — The material taken from each drum selected from the lot (see Table 2) in accordance with the procedure given in IS:9316 (Part 5)-1979\* shall be thoroughly mixed. An equal quantity of material shall be taken from each of the drums sampled from the lot. Such quantities from all the sampled drums shall be mixed well together so as to form a composite sample representing the lot as a whole. This composite sample shall not weigh less than 1800 g. This composite sample shall be divided into three equal parts, one for the purchaser, one for the supplier and the third to be used as a referee sample. Each part shall be transferred immediately to a suitable glass or polythylene bottle, properly sealed and fully labelled for later identification.

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\*Methods of test for rubber latex: Part 5 Drawing of samples.

†Methods for random sampling.

**A-2.2 Individual Sample** — The remaining portion of the material taken out according to A-2.1 from each drum shall be divided into three equal parts each part not weighing less than 300 g. These parts shall be transferred to sample bottles and properly sealed and fully labelled for later identification. The material in each such bottle shall constitute an individual test sample. These individual test samples shall be separated into three identical sets in such a way that each set has an individual test sample representing each drum sampled from the lot. One of these three sets shall be meant for the purchaser, another for the supplier and the third to be used as referee sample.

**A-2.3** The referee samples consisting of the composite sample and a set of individual samples shall bear the seals of the purchaser and the supplier and shall be stored in a manner agreeable to the parties and appropriate for preserving the properties of the material.

### **A-3. NUMBER OF TESTS**

**A-3.1** Tests for the determination of dry rubber content, ammonia content and KOH number shall be conducted on each of the individual samples.

**A-3.2** Tests for the remaining characteristics shall be conducted on the composite sample.

### **A-4. CRITERIA FOR CONFORMITY**

**A-4.1 Individual Samples** — For the characteristics (*see* A-3.1) tested on the individual samples, the lot shall be regarded to satisfy the requirements of this specification if each of the individual samples satisfy individually everyone of these requirements prescribed in Table 1.

**A-4.2 Composite Sample** — For the characteristics (*see* A-3.2) tested on the composite samples, the lot shall be regarded to satisfy the requirements of this specification if the composite sample satisfies the requirements of this specification for each of these characteristics.

**A-4.3** The lot shall be declared as conforming to the requirements of this specification if the lot has been found satisfactory in A-4.1 and A-4.2.

## IS : 11001 - 1984

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## INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

### Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

### Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

### Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	$1 \text{ N} = 1 \text{ kg m/s}^2$
Energy	joule	J	$1 \text{ J} = 1 \text{ N m}$
Power	watt	W	$1 \text{ W} = 1 \text{ J/s}$
Flux	weber	Wb	$1 \text{ Wb} = 1 \text{ V s}$
Flux density	tesla	T	$1 \text{ T} = 1 \text{ Wb m}^{-2}$
Frequency	hertz	Hz	$1 \text{ Hz} = 1 \text{ c/s (s}^{-1}\text{)}$
Electric conductance	siemens	S	$1 \text{ S} = 1 \text{ A/V}$
Electromotive force	volt	V	$1 \text{ V} = 1 \text{ W/A}$
Pressure, stress	pascal	Pa	$1 \text{ Pa} = 1 \text{ N/m}^2$

## INDIAN STANDARDS INSTITUTION

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones : 26 60 21, 27 01 31

Telegrams : Manaksanstha

### Regional Offices:

		Telephone
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